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CONVERTIBLE CLIPLESS BINDING/UNBOUND BICYCLE PEDAL

Abstract: A bicycle pedal having relative height variability between a clipless binding designed to engage a cleat recessed within a shoe sole, and a shoe supporting surface surrounding this binding, on both sides of the pedal. The relative height is sufficiently variable to allow the pedal to be used in either clipless binding operation or in unbound operation, on one or both sides of the pedal, respectively. The setting of the relative height between the bindings and the shoe supporting surfaces is effected on both sides of the pedal simultaneously, upon a single actuation by the cyclist. In addition, the cyclist may set the pedal to automatically change to unbound mode upon the release of the shoe cleat from the binding.

Pedal body (14) contains cutout (30), into which bindings (32) extend out of, or retract into. Bindings (32) are supported on links (42), which rotate on axles (44). Links (42) are held in extended position by clips (46) and (50) to provide for clipless binding pedal operation. To retract bindings for unbound operation, release plates (58A) and/or (58B) are depressed inward, pivoting clips (46) and (50) outward from bindings (32), thus releasing links (42) from clips (46) and (50), allowing binding assemblies (32) to retract into pedal cutout (30) by the action of retraction springs (45). Lock spring (40) deflects downward when cleat (31) is engaged with binding (32), placing lock tabs (41) between the sides of cutout (30) and tabs (53) of clips (46) and (50), thus blocking outward motion of clips (46) and (50), which prevents release of links (42) and the retraction of binding subassemblies (32) into pedal body (14). Under this condition, depressing release plates (58A) and (58B) causes spring levers (54) to deflect into an arcuate shape, and release plates (58A) and (58B) can be depressed past their maximum spread position, to a stable extended position resting against pocket (72) of pedal body (14), holding spring levers (54) deflected in an arcuate shape indefinitely. Upon disengagement of cleat (31) from binding (32), lock spring (40) returns to its normal upward position, freeing clips (46) and (50) to pivot outward from bindings (32) under the action of previously deflected springs (54), thus freeing links (42) to rotate under the action of retraction springs (45), retracting binding subassemblies into cutout (30) of pedal body (14), thus providing unbound operation on both sides of the pedal immediately following cleat (31) release from binding (32).

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